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**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Docket Number (Optional)

P0781L

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on September 2, 2005

Signature

Typed or printed William Y. Conwell  
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Application Number

09/801,515

Filed

March 7, 2001

First Named Inventor

Kenneth L. Levy

Art Unit

2135

Examiner

H. Song

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

☐

applicant/inventor.

☐

assignee of record of the entire interest.

See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.  
(Form PTO/SB/96)☒

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attorney or agent acting under 37 CFR 1.34.

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Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.  
Submit multiple forms if more than one signature is required, see below\*.

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**REASONS FOR PRE-APPEAL BRIEF REQUEST FOR REVIEW**

On appeal, the final rejections will be reversed. One reason is because the art fails to teach or suggest the limitations of the claims.

For example, claim 18 specifies “*an improvement wherein the digital watermark has only two states: present, or absent.*” Contrary to the rejection, the cited Linnartz reference does not teach this.

Linnartz is quite clear on this point. In addition to the possibility of the watermark being absent,<sup>1</sup> he states:

*“The content contains one of two categories of watermarks, either the watermark classifies the content as status a or b, or as status c.”<sup>2</sup>*

Accordingly, Linnartz’s arrangement is exactly the *opposite* of that specified by applicant’s claim 18, in which the watermark possibilities are only present or absent.

Independent claim 23 has a similar concluding limitation, again distinguishing Linnartz. (The Examiner’s rejection of this claim cited only col. 5, lines 8-10. But the two lines preceding this excerpt - which the Examiner did *not* cite - make clear that that watermark can indicate not just state a/b (as alleged in the excerpt), but also state c. If selective excerpting to create a misleading impression were not employed, Linnartz’s arrangement can be seen to be exactly the opposite of that specified by applicant’s claim.)

Claim 20 (dependent from just-discussed claim 18) requires “*said auxiliary data comprises header data.*” Linnartz does not teach this. The excerpt cited by the Examiner is not on point (col. 4, lines 54-65). It states:

*FIG. 2 shows a one-copy feature. The record carrier 21 carries watermarked video content 22, but also carries separate control signal, e.g. a copy control ticket(s) T such as a Play Ticket 25, having a state token ‘Playback only’ 25, and/or a Copy Ticket 26 having three consecutive tokens for Playback only 27, Record 28 and Playback copy 29. One copy content is watermarked, such that it can be detected as being in state a or b. Any recorder and any player which detects such watermark, assumes that the content is in state b (no more copy)*

<sup>1</sup> Linnartz patent 6,314,518, col. 5, line 10.

<sup>2</sup> 6,314,618, col. 4, lines 7-9 (emphasis added).

*unless an explicit authorization for recording or playback is granted in the form of the cryptographic ticket T.*

Nothing in this excerpt teaches or suggests header data. Indeed, Linnartz's ticket T is explained to be a physical mark on the disc media – distinguishing a read-only disc from a DVD-RAM.<sup>3</sup> This is not header data.

A similar “header data” limitation is found in claim 24 (which depends from claim 23).

Independent claim 22 is said to be anticipated by Ezaki. Not so. For example, Ezaki does not teach examining picture data for a digital watermark “*only if the copy control data is missing*,” as required by the claim. Ezaki's Watermark Decoder 40 (Fig. 8) is *always* operative. It *always* examines picture data for a digital watermark. It does not operate to examine the picture data for a digital watermark “*only if the copy control data is missing*,” as required by applicant's claim 22.

## **BACKGROUND**

The claims concern technology for managing the copying of video content – sometimes termed “copy control” technology.

Prior art arrangements – such as that illustrated by the cited Linnartz art – suffer by reason of their complexity, and therefor expense. One advantage of certain embodiments of the presently-claimed arrangements is their simplicity.

Video may be regarded as having two informational components: picture information, and auxiliary information. The picture information defines the visible contents of the sequence of desired images (e.g., by defining luminance and color values for pixels). The auxiliary information comprises additional information conveyed with the video - information that is not necessary to form the visible images.

In MPEG video, auxiliary information may comprise, e.g., the title of the video, the copyright date, and copying restrictions, and may be conveyed in one or more “header” fields of the video data file. In analog television signals, the auxiliary information may comprise teletext and captioning services, and may be conveyed by

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<sup>3</sup> 6,314,618, col. 4, lines 16-18.

modulation of the video signal during the vertical blanking interval, or VBI. (A great many other examples may be noted; these are simply illustrative.)

Auxiliary information may be lost if the format of the video is changed. For example, if an analog video signal having teletext in the VBI is converted to MPEG, there is no VBI in the MPEG. The teletext information is lost. Similarly, if an MPEG video is rendered for display on an analog monitor, and the analog signals are captured and recorded – e.g., on a VHS videorecorder, the auxiliary information conveyed in the MPEG header fields is lost.

This loss of auxiliary information may be overcome by encoding it in hidden form *within* the picture information. The human eye is sufficiently forgiving that subtle changes can be made, e.g., to pixel luminosities, to secretly convey at least some auxiliary information without noticeably impairing the picture. Such data hiding technology commonly is termed “digital watermarking” or steganography.

In the prior art, digital watermarking techniques are sometimes used to hide a control signal in video picture information – the control signal specifying one or more restrictions to be imposed on copying of the video (e.g., no copying, one generation of copying allowed, etc.) Such information persists even if the video format is changed, since format conversions generally preserve the picture information in which the control signal is carried.

In the principal reference, Linnartz,<sup>4</sup> the video can have four copy protection states. In one state the video has no watermark<sup>5</sup> (i.e., the watermark is absent), indicating the video can be freely copied. The other three states, a, b, and c, indicate to a compliant video recording device the following:

- a) One copy of the video may be made;
- b) No more copies may be made (*i.e.*, one copy *was* permitted, and has now been made<sup>6</sup>); and
- c) Never copy.<sup>7</sup>

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<sup>4</sup> Patent 6,314,518.

<sup>5</sup> 6,314,518, col. 5, line 10.

<sup>6</sup> When a copy is made, the copy does not include the cryptographic “control ticket” whose presence indicates the original disc. Without this ticket, the watermark is interpreted to mean that no more copies are permitted. *See, e.g.*, col. 4, lines 9-10 and 59-65.

<sup>7</sup> 6,314,518, col. 4, lines 1-10.

These three states are indicated by *two* different categories of watermarks.<sup>8</sup> One watermark classifies the video as having status (a OR b).<sup>9</sup> Another watermark classifies the video as having status c.<sup>10</sup>

In addition to conveying watermark data in the picture information, Linnartz's system also relies on information conveyed *outside* the picture information. In particular, his system looks for cryptographic data marked on a disc indicating whether it is a consumer-recordable disc (e.g., a DVD-RAM) or is a read-only disc that cannot be recorded by ordinary consumers (e.g., a DVD-ROM). Video marked with a "state c" watermark (i.e., "never copy") should not normally be encountered on a consumer-recordable disc. If a disc is found to have a "state c" watermark, and is a consumer-recordable disc, compliant playback equipment will infer that the disc is an illicit copy and will not play the disc.

Applicant's claim 18 defines a method in which video includes picture data (representing picture elements to be rendered for display to a user), and also includes auxiliary data *not* representing picture elements to be rendered for display to the user (i.e., not encoded as a watermark in the picture data). In the claimed method the auxiliary data is examined for copy control data. The picture data is examined for a digital watermark. A copy control decision is then based on the results of the foregoing examinations.

Importantly in certain of the claimed arrangements, the digital watermark is specified as having only *two* permitted states: present, or absent (distinguishing Linnartz's system). The watermark conveyed by the picture data can thus serve as a flag - indicating that the video is not freely copyable, but leaving specification of the copying restrictions to the copy control data that is conveyed outside the picture data.

In a more particular arrangement, the method includes prohibiting copying of the video content if the copy control data is absent and the digital watermark is present (dependent claim 19). This indicates that an attacker has tampered with the video, since a video should not include a watermark in the picture data if no copy control data is present by which the particular copying restrictions for that video can be determined.

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<sup>8</sup> 6,314,518, col. 4, lines 7-8.

<sup>9</sup> Statuses a and b are distinguished by the control ticket, noted above at fn. 6.

<sup>10</sup> 6,314,518, col. 4, lines 5-9.

In a further particular arrangement, the auxiliary data (which is examined for the copy control data) comprises header information (dependent claim 20).

In another particular arrangement, the auxiliary data comprises plural bits of copy control data (dependent claim 21).

Independent method claim 22 is similar to independent method claim 18. Again, the auxiliary data is examined for copy control information. However, in this arrangement, the picture data is examined for a digital watermark *only if the copy control data is missing*. If the copy control data is missing, *and* the digital watermark is present, then the method calls for limiting processing of the video content.

Independent method claim 23 is addressed to a method of preparing video content for distribution. Again, the video includes picture data that is digitally watermarked, and also includes auxiliary data. Copy control data is included in the auxiliary data, so that a compliant decoder device can make a copy control decision based on examination of the copy control data in conjunction with examination of the digital watermark.

Similar to claim 18, the arrangement of claim 23 requires that the digital watermark has one of only two possible states: present, or absent – again distinguishing Linnartz's more complex arrangement in which the watermark can have several states.

Independent claim 25 is directed to a data structure having video content stored therein. The video content includes picture data representing picture elements. The data structure also includes associated header data that does not represent picture elements. The header data includes copy control information. The picture data is encoded with a digital watermark. Again, the digital watermark has one of only two possible states: present, or absent.